

# PATENT ABSTRACTS OF JAPAN

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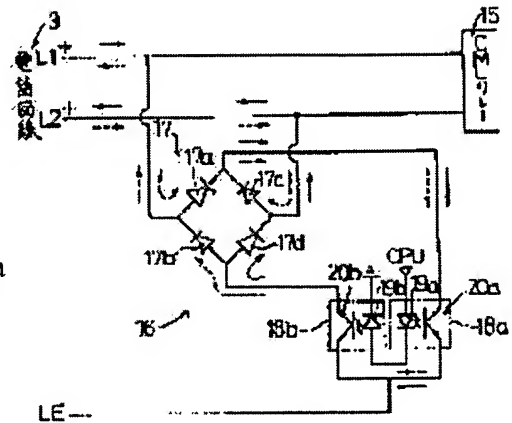
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## (54) GROUND KEY RELAY FOR TELEPHONE SET

(57)Abstract:

PURPOSE: To reduce the cost, to save the space and to simplify the configuration by connecting a solid-state relay to a rectifier element rectifying a signal from a telephone line depending on its polarity and activating the relay for on/off operation without a contact.

CONSTITUTION: When the polarity of a line L1 of a telephone line 3 is positive and the polarity of a line L2 is negative and a ground key of an operation section 8 is operated, a CPU applies a voltage to light emitting diodes 19a, 19b to light the diodes. Then photo transistors 20a, 20b are operated and a current from the line L1 flows to the line L2 via a rectifier circuit 17, the ground key relay 16 is closed to close a loop circuit for the line 3. Then a telephone exchange makes exchange of extensions based on the operation signal of the relay 16. When a detection circuit of the exchange 1 detects the polarity inversion of the line 3, the CPU stops the application of the voltage of the diodes 19a, 19b to turn off the relay 16. When the polarity of the circuit 3 is reversed, since the direction of the current in the circuit 17 is reversed, the cost is reduced, the energy is saved and the configuration is simplified.



## LEGAL STATUS

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